



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,039	12/02/2003	Stig Soerensen	40473-0014	4692
7590 STIG SOERENSEN CHR. WINTERS VEJ 36A LYNSBY, 2800 KGS DENMARK		05/03/2007	EXAMINER WEIER, ANTHONY J	
			ART UNIT 1761	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/725,039

Applicant(s)

SOERENSEN ET AL.

Examiner

Anthony Weier

Art Unit

1761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007 and 22 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-10,13-24,26-31,34-57,60-65,74 and 91-93 is/are pending in the application.
- 4a) Of the above claim(s) 30,31,34-57,60-65 and 92 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-10,13-24,26-29,74,91 and 93 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. This application contains claims drawn to an invention nonelected with traverse in a paper filed 4/28/06<sup>1</sup>. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 112, 1st paragraph***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 91 and 93 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, the original specification appears to only support batch or continuous mode altogether (see Abstract) or continuous mode for all components except an embodiment wherein the inactivation area can be both batch and continuous (see paragraph 60 in the published version of the instant application). The original specification does not appear to support an apparatus that operates continuously for all areas but also operates in batch mode for the hydrolysis or separation areas. In addition, instant claims 91-93 appear to refer to separate

---

<sup>1</sup> New claim 92 is included in this nonelected group of claims.

Art Unit: 1761

apparatus components from those set forth in claims 1, 31, and 74 to achieve the batch function (e.g. a second inactivation area). It does not appear that the original specification supports these additional components, although there is some support (as discussed above) for these particular areas in total or in view of only the inactivation area having the ability to operate continuously or batch-wise.

***Claim Rejections - 35 USC § 112, 2<sup>nd</sup> paragraph***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17, 91, and 93 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 91 and 93, it is not clear whether or not the areas set forth therein are new additional batch functioning components or whether the original areas may be operated

Claim 17 is confusing in what is meant by the thread having a sheet located at its periphery.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1761

7. Claims 1, 4-7, 14, 21, 22, 74, 91 and 93 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuentevilla.

Fuentevilla discloses a plant for continuous hydrolysis of a protein containing raw material (e.g. fish) and application of said products by way of packaging for commercial use. More specifically, Fuentevilla discloses a hydrolysis area (e.g. digester with tubular tanks and pipes), an inactivation area (preheater with steam), and separation area wherein the treated material is separated into solid and liquid portions by separating screens wherein it is inherent that said that at least separated outlets for the liquid and solids (as called for in instant claim 11) are present (e.g. Abstract; cols. 2 and 3). It is further expected that the digester therein would naturally maintain any emulsion therein from reaching a certain size by the limited space of the closed system therein.

Said claims further call for a collection area wherein pieces of protein-containing material are collected and provided to the hydrolysis area. However, the pump and pipes used to introduce the fish material into the first digesting vessel of Fuentevilla inherently act as a collecting area for same. In the alternative, Fuentevilla discloses introduction of a fragmented raw material which would indicate apparatus employed to reduce the size of same (as called for in claim 22) and that same would inherently provide a collection area for said material whether this is a vessel or pipe.

Although it is noted that some of the claims (e.g. claims 3-7) appear to be related to method steps, the instant claims are apparatus claims and the manner in which a machine is to be utilized is not germane to the issue of patentability of the machine

Art Unit: 1761

itself. In re Otto, 136 USPQ 458. Nevertheless, it is asserted that the system of Fuentevilla is capable of housing an emulsion as called for in any one of claims 3-7.

Claims 91 and 93 now call for the apparatus to include an area or areas that operate in a batch mode. The prior art of Fuentevilla (discloses previous attempts to perform a similar operation under batch mode, and it would have been further obvious to have incorporated same as a matter known prior art alternative.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8, 18, 20, 23, 24, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla.

The claims further call for slanted filter screens. Although Fuentevilla discloses the use of vibrating separating screens to remove solids from liquids, it is silent regarding whether or not said screens are slanted. However, devices employing slanted screens are notoriously well known, and, absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time of the invention to have included same as a matter of preference depending on the cost of screens available or the availability of same.

Claim 18 further calls for an agitator used adjacent the outlet of the inactivation reactor that suspends solid material in the reaction mixture. It should be noted that the vibrating separating screens in Fuentevilla would provide such function. However, it is not clear how far the screens exist from the inactivation reactor. Nevertheless, such determination, absent a showing of unexpected results, would have been well within the purview of a skilled artisan, and it would have been further obvious to have provided same adjacent to the outlet as a matter of preference for example, to provide a system which occupies less space.

The claims further call for the inclusion of a pump to move material from the inactivation area and toward the separation area. Although Fuentevilla is silent regarding the means used to move separated materials following the digester, pumps are notoriously well known for transfer of material, and it would have been further obvious to have employed such means as a matter of preference for its common use as a transferring means for liquid material.

Claims 23, 24, and 26-29 call for the apparatus to be capable of hydrolyzing a certain amount of material for a certain time and to yield a certain amount of product, respectively. It is not clear that Fuentevilla is capable of providing such specific amounts. However, such determination as to the size, processing time, and product yield would have been well within the purview of a skilled artisan, and, it would have been further obvious to have arrived at such amounts as a matter of preference depending on the amount of material to be treated and the processing speed/time

desired and to have provided an apparatus to achieve said amounts through routine experimental optimization of other apparatus variables.

10. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla taken together with DE 2526879.

The claims further call for the hydrolysis and inactivation areas to possess at least one feeder screw for conveying the reaction mixture there through. Although Fuentevilla is silent regarding same, it is well known to employ screw conveyors in reaction chambers as taught, for example, by DE 2526879 which also involves apparatus used to hydrolyze fish and separate same into different end products. It would have been obvious to one having ordinary skill in the art at the time of the invention to have included the rotating screw conveyor of DE 2526879 to convey material through portions of the hydrolysis apparatus (e.g. digester) as a matter of preference in convey said material. Moreover, the use of the screw conveyor would provide the added benefit of mixing, therefore, enhancing or quickening the hydrolyzing process.

The claims further call for the use of a second and third screw to facilitate movement of material in other parts of the apparatus. It would have been further obvious to have employed such extra screw conveyors to provide more consistency of movement throughout the whole system.

11. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla taken together with FR 2352498 or Fuentevilla taken together with DE 2526879 (as in paragraph 9 above) and FR 2352498.



Fuentevilla is silent regarding the use of a centrifuge to separate the liquid portion into two fractions. However, it is well known to employ centrifugation to separation liquids into different fractions. For example, FR 2352498 discloses enzymatic hydrolysis of fish with separation of liquid from solid and further separation of the liquids therein by centrifugation (see Figure). It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed centrifugation in separation of liquids as way to attain, for example, fats and oils. It is noted that instant claim 9 further calls for such apparatus to be used to separation water-soluble protein from water-insoluble proteins, and it is expected that the centrifuge used in the modified apparatus of Fuentevilla would be capable of providing such separation due to the recitation of FR 2352498 to remove oils and inherently therein oil-soluble material.

The claims further call for the inclusion of a pump to move said oil away from the reaction mixture. Although both Fuentevilla and FR 2352498 are silent regarding the means used to move separated materials from the reaction mixture, pumps are notoriously well known for transfer of liquid material, and it would have been further obvious to have employed such means as a matter of preference for its common use as a liquid transferring means.

The claims further call for a collection area wherein pieces of protein material are collected and then provided to the hydrolysis area. FR 2352498 further teaches the use of a feeder (10) which not only collects material to be digested but serves to convey same to the digester itself. It would have been further obvious to have incorporated

Art Unit: 1761

such collecting and conveying means as a conventional feeding means as a matter of preference depending on costs involved, space considerations, etc.

Claim 83 calls for the use of a decanter for separating fatty fractions. Although FR 2352498 teaches the use of a centrifuge for achieving same, it is well known to use decanting as a less complicated, cheaper alternative method for separation, and it would have been further obvious to have incorporated same as a conventional alternative separating means as a matter of preference depending on the cost involved or the equipment available.

12. Claims 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla taken together with DE2526879 and either one of MacKenzie or Eweson.

The claims call for a feeder screw that reverses rotation during certain periods of time. It should be noted that reaction vessels employ feed screws (out or in) that have the ability to reverse rotation as taught, for example, by either one of MacKenzie or Eweson. It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed such reverse action in the screw conveyor used to aid in feeding of material into the vessel as well as feeding same out of the vessel into another location as taught, for example, by Eweson (col. 3, lines 36-43) or to enable movement of material that may get caught or stuck in the vessel as taught, for example, by MacKenzie (col. 5, lines 1-10).

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla taken together with DE2526879 and Krofta.

The claims further call for the feeder screw to have a scoop located at its periphery. Such screw feeders are well known as taught, for example, by Krofta (see Figure 15). It would have been obvious to one having ordinary skill in the art at the time of the invention to have incorporated such scoop to facilitate gripping and moving of material with the screw feeder.

### ***Response to Arguments***

14. Applicant's arguments filed 1/16/07 have been fully considered but they are not persuasive.

Applicant argues that the recitation to "thread having sheet" in claim 17 is definite as same is set forth in an example of the specification. Though the example of the specification provides a little more information (i.e. dimensions are provided), it still remains unclear as to what this means.

Applicant argues that Fuentevilla employs a batch mode operation and is not continuous. However, the disclosure of Fuentevilla is replete with references to said process and components of said process being continuous. The recitation of continuous non-batch mode in the instant claims is considered broad enough to encompass the instant invention wherein, although there is reference to using batches of material, same are continuously processed.

Applicant argues that DE 2526879 does not disclose or suggest a separation area separately located from the inactivation area and wherein same is capable of separating it into two or more components including at least one substantially liquid component which comprises water-soluble protein and including at least one

substantially solid containing component. In addition, it is argued that DE 2526879 does not disclose or suggest the limitation regarding any emulsion present existing in an amount at or below a predetermined level. Applicant argues DE 2526879 as though same were applied alone against the claims, but this is not the case. It should be noted that these limitations were addressed with respect to the primary reference, Fuentevilla, and that DE 2526879 was only applied as a secondary reference relating known screw conveyors as called for in the instant claims.

All other arguments have been addressed in view of the rejections as set forth above.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

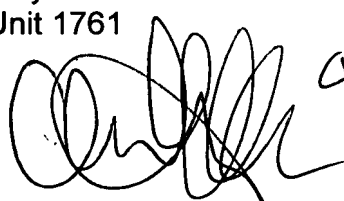
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Weier whose telephone number is 571-272-1409. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Weier  
April 17, 2007

Anthony Weier  
Primary Examiner  
Art Unit 1761



4/17/07